# Ecological attributes of strategic land acquisitions for addition to Victoria's public protected area estate (2006-2007)

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#### Abstract

The development of a comprehensive, adequate and representative reserve system is the key objective of the National Reserve System, and is supported by all Australian States and Territories. In Victoria, the purchase of private land for incorporation into the parks and reserves system assists in the protection of some of the State's most endangered ecosystems. This article outlines the ecological attributes of private land purchased for addition to the Victorian public protected area system in 2006 and 2007. (The Victorian Naturalist 125 (5), 2008, 140-149)

#### Introduction

This article documents some of the more significant land purchases made by the Department of Sustainability and Environment (DSE) for addition to the public conservation estate from early 2006 until late 2007, and provides a brief description of their ecological attributes. It serves as an extension to previous descriptions of the operation of the Department's Conservation Land Purchase Program in Victoria (see Fitzsimons and Ashe 2003, Fitzsimons et al. 2004, 2006). The program aims to systematically improve the comprehensiveness, adequacy, and representativeness (CAR) of the reserve system, with particular emphasis on high-quality examples of threatened and under-reserved ecosystems such as native grasslands and grassy woodlands. All acquisitions are on a completely voluntary basis. The program complements the work of the Victorian Environmental Assessment Council (VEAC) (and its predecessors) on public land, and the Trust for Nature and other programs (e.g. BushTender, Land for Wildlife) seeking to protect biodiversity on private land.

Purchase priorities are derived from published and internal inventories of the most significant sites containing threatened ecosystems throughout Victoria and are assessed in relation to the comprehensive-

ness, adequacy and representativeness of the existing reserve system. The Department also purchases private land to link park and reserve areas and remove inliers in order to consolidate protected habitat and alleviate potential management problems. All purchases described in this paper are managed for the conservation of biodiversity by Parks Victoria — except Branxholme Nature Conservation Reserve, which will be managed by a committee of management.

The conservation status of all species listed in this paper are outlined in Appendix 1, while Appendix 2 lists communities listed under the *Flora and Fauna Guarantee Act* 1988 (FFG) protected by the new reserves. Fig. 1 indicates the location of recent purchases within Victoria.

#### 1. Branxholme Swamp Scrub

This small property at Branxholme in the Victorian Volcanic Plain bioregion contains endangered Woolly Tea-tree Leptospermum lanigerum-dominated Swamp Scrub Ecological Vegetation Class (EVC). There is a strong presence of the FFG-listed Curly Sedge Carex tasmanica. The site is associated with Arrandoovong Creek where native fish species such as Shortfin Eel Anguilla australis, River Blackfish Gadopsis marmoratus, Common Galaxias Galaxias maculatus, Mountain Galaxias Golidus and Southern Pigmy Perch

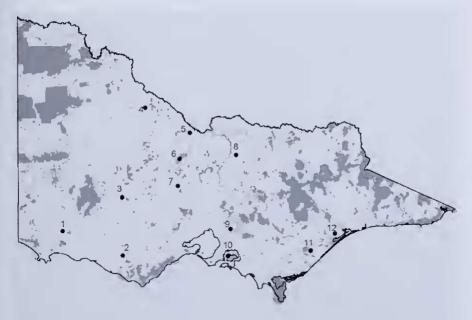


Fig. 1. Location of recent land purchases (numbered) for addition to the reserve system (existing reserve system shaded).

Nannoperca australis have been recorded directly adjacent to the purchased land.

It has been added to the adjoining public land to form the new three hectare Branxholme Nature Conservation Reserve.

#### 2. Ecklin South Swamp

The purchase of the 35 ha Ecklin South Swamp, near Timboon, protects a range of vegetation classes in the Victorian Volcanic Plain bioregion, a national biodiversity hotspot. Deep Freshwater Marshes are considered endangered in the bioregion, having been reduced to less than 30% of their original extent and facing ongoing threats to their viability. Fringing vegetation communities, including Swamp Scrub, Damp Heath Scrub and Scoria Cone Woodland EVCs, also are considered endangered or vulnerable in the bioregion.

Ecklin South Swamp has formed in a peat-filled crater that is partly drained (Fig. 2) (see Gill (1947) for a description of the formation of Ecklin Swamp and Ecklin Hill to the north). The swamp provides a breeding area for a number of species of waterbirds. It is the largest remaining permanent wetland in the region and it provides a refuge for waterfowl during pro-

longed periods of drought. Ecklin South Swamp is a nationally significant wetland listed under the *Directory of Important Wetlands in Australia* (Environment Australia 2001), as part of the Cobden-Terang Volcanic Craters (it is known as 'Bailey's Swamp' or 'Ecklin Swamp' in various versions of the Directory).

The Woolly Tea-tree-dominated Swamp Scrub provides likely habitat for the nationally-vulnerable Swamp Greenhood *Pterostylis tenuissima* and Small Sickle Greenhood *Pterostylis* sp. aff. *furcata* (endangered in Victoria).

The swamp protects important and permanent habitat of the nationally-vulnerable Growling Grass Frog *Litoria reniformis*, and the populations present at this site may be important for recolonisation of adjacent sites following population declines or extinctions. A number of vulnerable waterbird species, including Australasian Shoveller *Anas rhynchotis*, Royal Spoonbill *Platalea regia*, Hardhead *Aythya australis* and Musk Duck *Biziura lobata* have been recorded using the swamp.

The new reserve is known as the Ecklin South Swamp Nature Conservation Reserve.



Fig. 2. Aerial photograph (2003) of Ecklin South Swamp. The dashed white line represents the reserve boundary. Source: DSE.

# 3. Warrak Herb-rich Woodlands, Langi Ghiran

This 42 ha addition to the north-east boundary of Langi Ghiran State Park contains mostly Hills Herb-rich Woodland, a vulnerable EVC in the Central Victorian Uplands bioregion. A small amount of endangered Damp Sands Herb-rich Woodland is also present, while the depleted Grassy Dry Forest makes up the remainder.

# 4. Korrak Korrak Grasslands

This 130 ha high quality Chenopod Grassland and Riverine Chenopod Wood-

land at Korrak Korrak was purchased in 2006 to form the new Korrak Korrak Nature Conservation Reserve (Figs. 3 and 4). Chenopod Grassland, which is endangered in the Victorian Riverina bioregion, occupies approximately 107 ha of the property, while the vulnerable Riverine Chenopod Woodland occurs on the remaining 23 ha.

The highly diverse site contains a number of significant flora species, including only the second Victorian record of the bindweed *Convolvulus graminetinus*, populations of the nationally vulnerable Chariot Wheels



Fig. 3. Mix of species in the Korrak Korrak grasslands, including Golden Sunray Hyalosperma glutinosum subsp. glutinosum, Hairy Bluebush Maireana pentagona, Paper Sunray Rhodanthe corymbiflora, Short-wing Saltbush Sclerochlamys brachyptera and Stiff Cup-flower Pogonolepis muelleriana Photo: James Fitzsimons

Maireana cheelii, as well as Leafless Bluebush M. aphylla, Rohrlach's Bluebush M. rohrlachii, Cane Grass Eragrostis australasica, and Smooth Minuria Minuria integerrima. Pale Spike-sedge Eleocharis pallens is known from adjoining grasslands. The site has been considered a high priority for purchase by DSE for a number of years. Its purchase complements other purchases of native grassland for conservation at Korrak Korrak and nearby Budgerum by the Trust for Nature (O'Brien 2004; Trust for Nature 2007).

In 2008 the Victorian Environmental Assessment Council recommended the adjoining public land along Back Creck be added to Korrak Korrak Nature Conservation Reserve to form a larger reserve of some 273 ha (VEAC 2008). This Black Box Eucalyptus largiflorens and Tangled Lignum Muehlenbeckia florulenta creekline links to the Trust for Nature owned Korrak Korrak Grasslands Reserve and eventually to Yassom Swamp to the north (the latter recommended by VEAC (2008)

to be incorporated into a new Leaghur-Koorangie National Park).

# 5. Roslynmead East Grasslands, Patho Plains

The addition of 122 ha of endangered Northern Plains Grassland and Lignum Wetland to the reserve system complements other recent purchases by DSE and the Trust for Nature on the Patho Plains that have sought to increase the protection of grasslands in one of the largest areas remaining in Victoria (see Fitzsimons and Ashe 2003, Fitzsimons et al. 2004, 2006). The site is of very high significance due to the lack of cultivation and long-term light grazing regime. There has been virtually no mechanical disturbance over 80% of the property, with a small section cropped approximately 30 or more years ago.

The grassland is likely to provide habitat for Plains-wanderer *Pedionomus torquatus*, with a population recently recorded from the nearby Kotta Nature Conservation Reserve. Baker-Gabb (2001) indi-



Fig. 4. Grassland and Black Box woodland on Korrak Korrak Nature Conservation Reserve. Photo: Deanna Marshall.

cated that all suitable native grasslands within a 40 km radius of Terrick Terrick National Park play a key role in conserving this nationally vulnerable species. The grassland also provides habitat for a number of other significant fauna species recorded in nearby native grasslands, such as Curl Snake *Suta suta* and Fat-tailed Dunnart *Sminthopsis crassicaudata*.

The scattered Umbrella Wattle Acacia oswaldii have all died over the past 30 years – possibly due to the effects of grazing on recruitment. Significant flora species that have been recorded on the site include Red Swainson-pea Swainsona plagiotropis, Silky Swainson-pea S. sericea, Frosted Goosefoot Chenopodium desertorum subsp. virosum and Leafless Bluebush, while a number of other species occurring on nearby native grasslands are likely to occur here (e.g. Slender Darlingpea S. murrayana, Downy Swainson-pea S. swainsonioides and Woolly Mantle Eriochlamys behrii).

The new reserve is known as the Roslynmead East Nature Conservation Reserve and has recently been recommended for inclusion in an expanded Terrick Terrick National Park (VEAC 2008).

#### 6. Neilborough Whipstick

This 130 ha property at Blandfords Road. Neilborough, is an inlier within the Greater Bendigo National Park and has been purchased for addition to this park. It comprises areas of remnant Sandstone Ridge Shrubland and Box-Ironbark Forest with large old Red Ironbark Eucalyptus tricarpa, as well as stands of the rare Kamarooka Mallee E, froggattii and a variety of orchid species. An area that appears to have been historically cleared is recovering well with a high cover of Wallaby Grass Austrodanthonia sp. and scattered Drooping Cassinia Cassinia arcuata and Whirrakee Wattle Acacia williamsonii. There are two drainage lines through the mallee with medium sized Yellow Gums Eucalyptus leucoxylon, a vegetation type that provides potentially suitable habitat for the nationally endangered Whipstick Westringia Westringia crassifolia.

This addition complements 163 ha of land, which as a result of vegetation off-

sets, has recently been added to the Whipstick and Kamarooka sections of the Greater Bendigo National Park.

7. Welsh Village, Chewton

This 9.2 ha property near Chewton was purchased for its historic and cultural values, namely as part of the former Welsh Village, and includes a late 19th century quartz gold mine. The site contains Heathy Dry Forest with large trees and an understorey in good condition. The site will be added to the adjoining Castlemaine Diggings National Heritage Park.

8. Holylands Swamp, Caniambo South

This 129 ha property at Caniambo South, south-east of Shepparton, contains remnants of two endangered EVCs, and includes the bioregionally significant Holylands Swamp (Fig. 5). The remnant vegetation on the property represents one of the largest patches of native vegetation left in the Sheep Pen Creek district. Occurring on the riverine plain, it has a natural drainage line that flows through the property and links Holylands Swamp with other wetlands in the district. There are relatively few wetlands in the Victorian Riverina bioregion reserved in strict nature conservation reserves (Robertson and Fitzsimons 2005).

The Red Gum Swamp EVC is dominated by River Red Gum Eucalyptus camaldulensis of all age classes, but with large numbers of mature trees. The wetland habitat ranges from open wetlands to treedominated swamps. The groundcover is dominated by Brown-back Wallaby-grass Austrodanthonia duttoniana, Swamp Wallaby-grass Amphibromus sp., rushes Juncus sp. and Common Spike-sedge Eleocharis acuta. The Plains Grassy Woodland EVC is mostly cleared, apart from scattered, mature Grey Box Eucalyptus microcarpa.

Considering the size of the site, restoration of the mostly cleared Plains Grassy Woodland EVC should assist with the conservation of the Grey-crowned Babbler *Pomatostomus temporalis*, an endangered species whose stronghold in north-east Victoria is the Sheep Pen Creek district (Robinson 2006).

The new reserve is known as the Caniambo South Nature Conservation Reserve.

## 9. Rainbow Gully, Olinda

This 21 ha property represents a relatively large inlier within the Dandenong Ranges National Park. The land has over 60% cover of native Shrubby Foothill Forest, Wet Forest and Damp Forest, including Mountain Ash *Eucalyptus regnans*, Mountain Grey Gum *E. cypellocarpa*, Narrow-leaf Peppermint *E. radiata*, Messmate Stringybark *E. obliqua* and deep fern gullies. The purchase of this block for addition to the Dandenong Ranges National Park consolidates the park and removes a number of potential threats.

10. 'Grassy Swamp', French Island

The addition of the 27 ha 'Grassy Swamp' to the French Island National Park adds a grassy wetland community not previously represented in the park. The intact



Fig. 5. Holylands Swamp, Caniambo South Nature Conservation Reserve. Photo: Lance Williams.

ephemeral swamp includes large mosaics of sedges, rushes and other aquatic vegetation, including native grasses such as *Agrostis*, *Deyeuxia*, *Danthonia* and *Microlaena*, which dominate large areas of the block. Areas of Swamp Scrub (an endangered EVC) and Wet Heathland occur around the swamp margin. The swamp fills from drainage lines within the park connected to the Heifer, Little Heifer and Prairie Swamps system.

The swamp provides seasonal open water and important habitat for migratory waders and the critically endangered Orange-bellied Parrot *Neophema chrysogaster*, as well as other significant species such as Blue-winged Parrot *N. chrysostoma* and King Quail *Excalfactoria chinensis victoriae*. French Island is considered the most important area in Victoria for the latter endangered species (O'Brien 2006).

### 11. Ben Winch Swamp, Holey Plains

This 178 ha property contains Ben Winch Swamp and surrounding ecosystems and was purchased for addition to the Holev Plains State Park, south of Rosedale (Fig. 6). Located in the Gippsland Plain bioregion, it contains threatened wetland ecosystems (deen freshwater marsh/sedge wetland), and vulnerable Lowland Forest. Riparian Scrub and Damp Sands Herb-rich Woodland EVCs. Ben Winch Swamp has been identified as a site of regional zoological and geological/geomorphological significance (Rosengren et al. 1981). The adjacent Holey Plains State Park has been classified as a site of national zoological and botanical significance (Mansergh and Norris 1982; Gullan et al. 1984).

This complex wetland is over 1500 metres long and lies in a broad valley eroded in Tertiary sediments. Unlike any other swamps or lakes in the Stradbroke-Holey Plains area, Ben Winch Swamp has prominent relict spits that extend from the southern shoreline and divide the basin into five segments (Rosengren *et al.* 1981). The vegetation is of very high quality and, despite disturbance to part of the wetland prior to 1998 (in the form of peat extraction), the area is rehabilitating well.

The property supports some of the westernmost examples of Coast Grey Box Eucalyptus bosistoana forests in good condition, a community which is much reduced from its former range and with many remaining stands in poor condition.

The site also supports the nationally endangered Dwarf Kerrawang Rulingia prostrata. Although now understood to be more widespread than previously thought. many of the sites are on private property and prone to degradation through grazing and weed encroachment (N. Walsh pers. comm. 2007). The importance of Ben Winch Swamp for this species is highlighted in the FFG Action Statement (James 2003). Other significant flora species recorded on the site include the nationallyvulnerable Wellington Mint-bush Prostanthera galbraithiae and a significant westerly range extension for the Slender Mat-rush Lomandra confertifolia subsp. leptostachya (N. Walsh pers. comm. 2007).

Surveys in the area have confirmed that the Lowland Forest and Heathy Woodland on the property are part of the territory of one or more Powerful Owls *Ninox strenua*. In addition, a recent record several kilometres to the west suggests that it is possible that the area is also used by the endangered Masked Owl *Tyto novaehollandiae*, which inhabits more open forests and woodlands and occurs on the forest-cleared land interface, both of which are present at Ben Winch Swamp (R Willig pers. comm. 2007).

# 12. Bengworden Grassy Woodlands

This 106 ha property at Bengworden, west of Bairnsdale, contains a number of endangered grassy ecosystems of very high conservation significance. The vegetation is dominated by Plains Grassy Woodland (specifically, the FFG-listed Forest Red Gum Grassy Woodland; see front page), with smaller areas of the endangered Plains Grassy Wetland and vulnerable Damp Sands Herb-rich Woodland. Its purchase improves the conservation of these threatened EVCs within the Gippsland Plains bioregion. The vegetation is of high quality with limited areas of disturbance, consistent with a history of grazing with no attempt to establish introduced pasture. The site is considered one of the highest quality examples of known remnants of Plains Grassy Woodland on the Gippsland Plains, after Mooramung Flora and Fauna



Fig 6. Ben Winch Swamp and fringing vegetation. Photo: Melissa Ainsworth.

Reserve to the north (R Edwards pers. comm. 2007).

The rare Bear's-ear *Cymbonotus lawsonianus* has been recorded on the property. No fauna surveys have been undertaken to date.

This purchase enhances landscape connectivity and habitat linkages with areas of Plains Grassy Woodland covenanted with Trust for Nature on adjoining and nearby properties, and contributes to the Gippsland Plains Conservation Management Network (Fitzsimons and Wescott 2005).

The new reserve is known as the Bengworden Nature Conservation Reserve.

# Other purchases

Two properties containing Wet Forest and Damp Forest EVCs totalling 30 ha at Kinglake and St Andrews North have been added to the Kinglake National Park to rationalise park boundaries. A small area (0.8 ha) of Chenopod Shrubland was added to the existing Winlaton Nature Conservation Reserve purchased in 2004 (see Fitzsimons et al. 2006)

# Future directions for land purchase and the protected area system

Such strategic acquisitions, combined with other instruments to protect ecosystems on

private land, ultimately aim to improve the completeness, adequacy and representativeness of Victoria's protected area system. The funding and negotiation for purchase of other poorly represented ecosystems is currently in progress. Particular emphasis is on native grasslands and grassy woodlands. The Department's efforts are complemented by those of the Trust for Nature (Victoria) which has purchased and continues to purchase properties containing grassy and other threatened ecosystems throughout the State as part of the National Reserve System Program. Increasingly, creative solutions are being sought between DSE and the Trust to secure important conservation lands (see Fitzsimons and Davies 2005).

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these properties have ensured the maintenance of these remnants. Many of the past owners still have a strong connection to the new protected areas. The Commonwealth Government, through the National Reserve System Program of the Natural Heritage Trust, provided funding for the purchase of a number of these properties.

#### References

Baker-Gabb D (2001) Plains-wanderers in and around Terrick Terrick National Park. Unpublished report for the Department of Natural Resources and Environment by Elanus Pty Ltd. Greensborough.

DSE (2005) Advisory List of Rare or Threatened Plants in Victoria – 2005. (Department of Sustain-

ability and Environment: Melbourne)

DSE (2007) Advisory List of Threatened Vertebrate Fauna in Victoria – 2007. (Department of Sustain-

ability and Environment: Melbourne)

Environment Australia (2001) Directory of Important Wetlands in Australia. 3rd ed. (Environment Australia: Canberra) Available: http://www.environment.gov.au/cgi-bin/wetlands/search.pl?smode=DOIW [Accessed 27 July 2007].

Fitzsimons J and Davies Z (2005) Productive partnerships/creative solutions – Trust for Nature and DSE working together. *Conservation Bulletin* 32, 4-5.

Fitzsimons JA and Ashe C (2003) Some recent strategic additions to Victoria's protected area system 1997-2002. *The Victorian Naturalist* 120, 98-108.

Fitzsimons JA, FitzSimons P and Ashe C (2004) Further strategic additions to Victoria's public protected area system: 2002-2004. *The Victorian Naturalist* 121, 214-225.

Fitzsimons JA and Wescott G (2005) History and attributes of selected Australian multi-tenure reserve networks. *Australian Geographer* **36**, 75-93.

Fitzsimons JA, Williams C and Fitzsimons P (2006) Ecological attributes of strategic additions to Victoria's public protected area estate: 2004–2005. *The Victorian Naturalist* **123**, 134-145.

Gill ED (1947) Ecklin Hill – A volcano in the western district of Victoria. *The Victorian Naturalist* **64**, 130-134.

Gullan PK, Earl GE, Forbes SJ, Barley RH and Walsh NG (1984) Sites of Botanical Significance in Central Gippsland. (Department of Conservation, Forests and Lands: Melbourne)

James M (2003) Dwarf Kerrawang *Rulingia prostrata*. Flora and Fauna Guarantee Action Statement No. 144. (Department of Sustainability and Environment:

Melbourne)

Mansergh IM and Norris KC (1982) Sites of Zoological Significance in Central Gippsland. Volume I: Report. (Environmental Studies Program, Ministry for Conservation: Melbourne)

O'Brien E (2004) Korrak Korrak Grassland Management Plan. (Trust for Nature (Victoria):

Melhourne)

O'Brien MB (2006) Distribution, habitat and status of the King Quail Coturnix chinensis victoriae in Victoria: The importance of French Island, Western Port Bay, Australian Field Ornithology 23, 62-76.

Robertson HA and Fitzsimons JA (2005) Wetland reservation on Victoria's Northern Plains and riverine forests. *Proceedings of the Royal Society of* 

Victoria 117, 139-148.

Robinson D (2006) Is revegetation in the Sheep Pen Creek area, Victoria, improving Grey-crowned Babbler habitat? *Ecological Management* &

Restoration 7, 93-104.

Rosengren NJ, McRae-Williams MS and Kraemers SH (1981) Sites of Geological and Geomorphological Significance in Central Gippsland. (Environmental Studies Program, Ministry for Conservation: Melbourne)

Trust for Nature (2007) 'Trust for Nature acquires grassland for conservation' Media Release, September 28, 2007. Available: http://www.trustfornature.org.au/documents/press/Trust%20for%20Nature%20acquires%20north%20central%20grassland%20270907(3).pdf

VEAC (2008) River Red Gum Forests Investigation Final Report. (Victorian Environmental Assessment

Council: Melbourne)

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# Appendices

Appendix 1. Some species occurring (or likely to occur) on recently purchased land (and their conservation status). Abbreviations: (Victorian Status) ce, critically endangered; e, endangered; v, vulnerable; r, rare; n, near threatened; k, poorly known/data deficient; (FFG) L, listed under the Flora and Fauna Guarantee Act 1988; (Commonwealth Status) CE, critically endangered; E, endangered; V, vulnerable. Derived from DSE (2005, 2007), Flora and Fauna Guarantee Act 1988 and Environment Protection and Biodiversity Conservation Act 1999. Note: This table does not represent all species occurring in the above-mentioned reserves.

	Scientific Name	Common Name	Vic Status	FFG	Cwlth Status
Mammals	Sminthopsis crassicaudata	Fat-tailed Dunnart	k		
Birds	Anas rhynchotis	Australasian Shoveller	ν		
	Aythya australis	Hardhead	V		
	Biziura lobata	Musk Duck	V		
	Excalfactoria chinensis victoriae	King Quail	e	L	
	Neophema chrysogaster Neophema chrysostoma	Orange-bellied Parrot Bluc-winged Parrot	ce	L	CE
	Ninox strenua	Powerful Owl			
	Pedionomus torquatus	Plains-wanderer	ce	L	V
	Platalea regia	Royal Spoonbill	V		
	Pomatostomus temporalis	Grey-crowned Babbler	e	L	

ppei		

	Scientific Name	Common Name	Vic Status	FFG	Cwlth Status
	Tyto novaehollandiae	Masked Owl	e	L	
Reptiles	Suta suta	Curl Snake			
Amphibians	Litoria raniformis	Growling Grass Frog	e	L	V
Fishes	Anguilla australis Galaxias maculatus Galaxias olidus Gadopsis marmoratus Nannoperca australis	Shortfin Eel Common Galaxias Mountain Galaxias River Blackfish Southern Pigmy Perch		L	
Plants	Acacia oswaldii Acacia williamsonii Austrodanthonia duttoniana Carex tasmanica Cassinia arcuata Chenopodium desertorum	Umbrella Wattle Whirrakee Wattle Brown-back Wallaby-grass Curly Sedge Drooping Cassinia Frosted Goosefoot	v r v k	L	V
	subsp. virosum Convolvulus graminetinus Cymbonotus lawsonianus Eleocharis acuta Eleocharis pallens Eragrostis australasica Eriochlamys behrii Eucalyptus bosistoana Eucalyptus canaldulensis	Bindweed Bear's-ear Common Spike-sedge Pale Spike-sedge Cane Grass Woolly Mantle Coast Grey Box River Red Gum	r k v r		
	Eucalyptus froggattii Eucalyptus largiflorens Eucalyptus leucoxylon Eucalyptus microcarpa Eucalyptus tricarpa Hyalosperma glutinosum subsp. glutinosum Leptospermun lanigerun Lomandra confertifolia subsp. leptostachya	Kamarooka Mallee Black Box Yellow Gum Grey Box Red Ironbark Golden Sunray Woolly Tea-tree Slender Mat-rush	r	L	
	Susp. reprostactiva Maireana aphylla Maireana cheelii Maireana pentagona Maireana rohrlachii Minuria integerrima, Muehlenbeckia florulenta Pogonolepis muelleriana	Leafless Bluebush Chariot Wheels Hairy Bluebush Rohrlach's Bluebush Smooth Minuria Tangled Lignum Stiff Cup-flower	k v k r	N	V
	Prostanthera galbraithiae Pterostylis sp. aff. furcata Pterostylis tennissima Rhodanthe corymbiflora	Wellington Mint-bush Small Siekle Greenhood Swamp Greenhood Paper Sunray	v e v	N	L V
	Rulingia prostrata Sclerochlamys brachyptera	Dwarf Kerrawang Short-wing Saltbush	e	L	Е
	Swainsona murrayana Swainsona plagiotropis Swainsona sericea	Slender Darling-pea Red Swainson-pea Silky Swainson-pea	e e v	L L	V V
	Swainsona swainsonioides Westringia crassifolia	Downy Swainson-pea Whipstick Westringia	e e	L L	Е

Appendix 2. Some listed *Flora and Fauna Guarantee Act 1988* communities occurring on recently purchased land.

Northern Plains Grassland Forest Red Gum Grassy Woodland Victorian temperate-woodland bird eommunity